WHAT IS CLAIMED IS:

1. A rolling bearing having an outer ring, an inner ring, and a plurality of rolling elements, wherein at least one of the members, the outer ring, inner ring and rolling elements, has a nitrogen rich layer, and the grain size number of austenite crystal grains in said nitrogen rich layer is in the range exceeding the number 10.

2. A rolling bearing as set forth in Claim 1 wherein the nitrogen content in the nitrogen rich layer is in the range of 0.1 - 0.7%.

3. A rolling bearing as set forth in Claim 2, wherein said member is a raceway ring and said nitrogen content is its value measured in the 50 μm-deep layer of the raceway surface after grinding.

4. A rolling bearing as set forth in Claim 1, wherein the hardness in said nitrogen rich layer is not less than Hv 700.

5. A rolling bearing as set forth in Claim 4, wherein the hardness is within the range of Hv 720 - Hv 800.

6. A rolling bearing as set forth in Claim 4 or 5, wherein said member is a raceway ring and said hardness is a value in the 50 μm-deep layer of the raceway surface after grinding.

7. A rolling bearing as set forth in Claim 1, wherein the retained austenite content in the nitrogen rich layer is in he range of 11 - 25%.

8. A rolling bearing as set forth in Claim 7, wherein the nitrogen content in the nitrogen rich layer is in the range of 0.1 - 0.7%.

9. A rolling bearing as set forth in Claim 8, wherein said member is a raceway ring and said nitrogen content is its value measured in the 50 μm-deep layer of the raceway surface after grinding.